

of the region within which icebergs or field ice were reported for October during the last 10 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
October, 1883.....	46 56	46 22	October, 1883.....	46 56	42 22
October, 1884.....	Off Cape Race		October, 1884.....	46 56	50 55
October, 1885.....	48 21	47 12	October, 1885.....	48 21	47 12
October, 1886.....	41 34	49 43	October, 1886.....	46 03	46 37
October, 1887.....	42 58	50 02	October, 1887.....	42 58	50 02
October, 1888.....	51 43	55 36	October, 1888.....	51 43	55 36
October, 1889.....	44 32	49 38	October, 1889.....	46 30	45 59
October, 1890.....	44 47	49 33	October, 1890.....	47 56	45 45
October, 1891.....	48 04	48 27	October, 1891.....	48 04	48 27
October, 1892.....	Straits of Belle Isle		October, 1892.....	52 34	51 09
Mean.....	46 41	50 40	Mean.....	47 48	48 49

Ice was not reported south of the 50th parallel. In an area extending from the Straits of Belle Isle to the 51st meridian ice was reported on the 1st, 5-9th, 16th, 18th, 22d, and 27th. The southern limit of ice was nearly 5° north and the eastern

limit was about 5° west of the average southern and eastern limits of ice for October. The quantity of ice was notably deficient when compared with the average amount reported for October of preceding years. The region within which icebergs or field ice were reported for the current month is shown on Chart I by ruled shading.

#### OCEAN FOG IN OCTOBER.

The limits of fog belts west of the 40th meridian, as determined by reports of shipmasters, are shown on Chart I by dotted shading. Near the Banks of Newfoundland fog was reported on 9 dates; between the 55th and 65th meridians on 3 dates; and west of the 65th meridian on 2 dates. Compared with the corresponding month of the last 5 years the dates of occurrence of fog near the Grand Banks numbered 4 less than the average; west of the 55th meridian the number of foggy days corresponded with the average. The fog noted west of the 40th meridian, and at stations of the Weather Bureau on the middle Atlantic and New England coasts, generally attended the advance from the interior of areas of low barometric pressure.

#### TEMPERATURE OF THE AIR (expressed in degrees Fahrenheit).

The distribution of mean temperature over the United States and Canada for October, 1892, is exhibited on Chart II by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the average for the several districts. The normal for any district may be found by adding the departure to the current mean when the temperature is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Weather Bureau represents the mean of the maximum and minimum temperatures.

The mean temperature was highest in the Colorado Desert, California, and over the southern extremity of Florida, where it was above 75, and the mean values were about 70 generally over the Florida Peninsula, at points along the immediate middle Gulf coast, over the southern half of eastern Texas, and in southeastern California and western Arizona. Over the Gulf States and in the central valleys of California the mean readings were above 60. The mean temperature was lowest in the eastern Saskatchewan valley, in the mountains of central Colorado, on the north shore of Lake Superior, and in the lower Saint Lawrence valley, where it was below 40, and the mean temperature was below 50 north of a line traced from the central New England coast westward over the Lake region to western South Dakota, thence southward to central New Mexico, thence to the Sierra Nevada Mountain range in eastern California, and east of this line traced from north-eastern California over eastern Oregon and eastern Washington.

#### DEPARTURES FROM NORMAL TEMPERATURE.

The mean temperature was above the normal, except in Nova Scotia, and from the lower lake region to the east Gulf and south and middle Atlantic coasts, over the southern plateau and a part of the middle plateau region, and along the Pacific coast south of the Columbia River. The greatest departure above the normal temperature was shown from the middle Missouri valley over Manitoba, where it exceeded 5, and the most marked departure below the normal temperature was noted along the immediate Atlantic coast from Virginia to northern Florida, where it was more than 2.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for October for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for October, 1892; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for October, during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of Oct.	(2) Length of record.	(3) Mean for Oct., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for October.			
					Highest.	Year.	Lowest.	Year.
<i>Arizona.</i>	°	Years	°	°	°		°	
Fort Apache.....	56.0	20	53.6	- 2.4	60.0	1875	50.6	1883
Fort Mohave.....	73.0	20	71.3	- 1.7	80.0	1875	68.5	1886
Whipple Barracks.....	55.0	21	54.0	- 1.0	62.2	1875	49.9	1883
<i>Arkansas.</i>								
Keesee Ferry.....	60.1	10	60.9	+ 0.8	64.0	1881	56.0	1885
<i>California.</i>								
Fort Bidwell.....	51.3	20	48.6	- 2.7	59.2	1875	45.1	1873
Riverside.....	64.0	10			67.2	1885	60.7	1886
<i>Colorado.</i>								
Las Animas.....	53.0	9	50.0	- 3.0	57.1	1889	49.4	1883
<i>Florida.</i>								
Merritts Island.....	75.4	10	73.8	- 1.6	79.0	1882	72.9	1891
<i>Georgia.</i>								
Forsyth.....	66.9	18	68.0	+ 1.1	75.4	1884	61.7	1885
<i>Idaho.</i>								
Boise Barracks.....	50.0	18	51.2	+ 1.2	56.9	1872	44.5	1883
Fort Sherman.....	46.4	9	49.8	+ 3.4	50.8	1889	41.2	1883
<i>Illinois.</i>								
Centralia.....	52.8	9			61.7	1883	45.0	1880, 1882
<i>Indiana.</i>								
Lafayette.....	52.5	10	56.0	+ 3.5	56.4	1881	47.9	1889
<i>Indian Territory.</i>								
Fort Supply.....	53.6	12	58.6	0.0	62.2	1874	54.4	1885
<i>Iowa.</i>								
Cresco.....	45.8	20	49.2	+ 3.4	54.1	1879	41.2	1873
<i>Kansas.</i>								
Eureka Ranch.....	55.6	9	56.0	+ 0.4	62.9	1886	51.0	1883
Independence.....	58.4	20	60.8	+ 2.4	63.0	1881	52.2	1873
Salina.....	57.5	10	56.6	- 0.9	62.4	1886	52.0	1883
<i>Louisiana.</i>								
Grand Coteau.....	68.0	11	69.4	+ 1.4	75.5	1883	63.4	1891
<i>Maine.</i>								
Orono.....	45.6	21	45.3	- 0.3	49.7	1879	42.1	1888
<i>Maryland.</i>								
Cumberland.....	53.1	21	52.6	- 0.5	60.0	1881	48.0	1888
<i>Michigan.</i>								
Kalamazoo.....	50.0	16	51.9	+ 1.9	54.5	1879	45.7	1887
<i>Missouri.</i>								
Sedalia.....	57.0	10	58.8	+ 1.8	61.4	1886	51.3	1883
<i>Montana.</i>								
Fort Custer.....	47.4	13	52.0	+ 4.6	55.0	1891	42.2	1883
<i>Nebraska.</i>								
Fort Robinson.....	48.6	9	50.6	+ 2.0	53.6	1884	41.4	1883
Genoa (near).....	49.2	16	54.1	+ 4.9	55.9	1886	45.0	1883
<i>Nevada.</i>								
Browns.....	54.5	20	53.0	- 1.5	61.7	1875	46.4	1882
Carson City.....	48.9	15	47.6	- 1.3	55.1	1875	44.0	1883

## Departures from normal temperature—Continued.

State and station.	(1) Normal for the month of Oct.	(2) Length of record.	(3) Mean for Oct., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for October.			
					Highest.	Year.	Lowest.	Year.
<i>New Hampshire.</i>		<i>Years</i>						
Hanover .....	44.9	21	46.4	+ 1.5	52.4	1879	40.5	1888
<i>New Mexico.</i>								
Deming .....	66.9	10	60.5	- 6.4	72.4	1885	60.5	1892
Fort Wingate .....	52.5	21	50.9	- 1.6	57.8	1875	47.2	1871
<i>New York.</i>								
Cooperstown .....	46.4	21	45.9	- 0.5	53.3	1879	41.5	1888
Plattsburg Barracks .....	47.1	21	46.0	- 1.1	53.6	1879	42.1	1888
<i>North Carolina.</i>								
Lenoir .....	56.4	21	54.9	- 1.5	66.4	1878	48.0	1874
<i>Oklahoma.</i>								
Fort Reno .....	60.9	9	.....	.....	65.6	1888	57.1	1887
Fort Sill .....	62.1	20	61.1	- 1.0	70.0	1874	57.7	1885
<i>Oregon.</i>								
Bandon .....	52.0	8	52.8	+ 0.8	55.2	1889	47.0	1886
Eola .....	51.6	21	.....	.....	59.7	1876	45.4	1873
<i>Pennsylvania.</i>								
Dyberry .....	46.4	19	44.4	- 2.0	53.4	1879	41.3	1888
Grampian .....	47.6	21	47.4	- 0.2	56.4	1879	43.4	1888
Wellsboro .....	48.6	12	43.3	- 5.3	54.2	1881	41.2	1889
<i>South Carolina.</i>								
Statesburg .....	63.0	11	62.3	- 0.7	69.0	1881	58.7	1891
<i>South Dakota.</i>								
Fort Sully .....	48.7	21	54.8	+ 6.1	56.0	1879	42.1	1873
<i>Texas.</i>								
Austin .....	67.5	20	68.8	+ 1.3	73.6	1883	63.0	1873
Silver Falls .....	62.4	6	61.1	- 1.3	64.4	1890	59.7	1887
<i>Utah.</i>								
Terrace .....	52.3	16	56.0	+ 3.7	67.1	1887	45.8	1878
<i>Vermont.</i>								
Stratford .....	46.7	19	45.3	- 1.4	52.8	1879	40.6	1888
<i>Virginia.</i>								
Dale Enterprise .....	56.6	12	53.8	- 2.8	61.3	1886	48.2	1890
<i>Washington.</i>								
Fort Townsend .....	50.6	16	50.0	- 0.6	54.6	1875	48.6	1879
<i>West Virginia.</i>								
Parkersburg .....	58.0	11	.....	.....	71.5	1882	49.0	1888
<i>Wisconsin.</i>								
Embarrass .....	48.7	21	49.7	+ 1.0	57.5	1879	43.2	1889
Madison .....	47.8	16	52.1	+ 4.3	52.4	1886	44.1	1887
<i>Wyoming.</i>								
Fort Washakie .....	43.3	9	46.1	+ 2.8	47.2	1889	39.9	1881

## YEARS OF HIGHEST MEAN TEMPERATURE FOR OCTOBER.

At Huron and Rapid City, S. Dak., Bismarck and Fort Buford, N. Dak., and Saint Vincent, Minn., the mean temperature for the current month was the highest ever reported for October during the respective periods of observation. The highest mean temperature for October was noted from the north Pacific coast over the northeast slope of the Rocky Mountains in 1889; on the middle Pacific coast in 1887; in the east Gulf states in 1884; in the middle Gulf states in 1883; along the Atlantic coast south of Pennsylvania in 1881; and from the lower Missouri and upper Mississippi valleys over the Ohio Valley, the Lake region, New York, and New England in 1879.

## YEARS OF LOWEST MEAN TEMPERATURE FOR OCTOBER.

At Deming, N. Mex., the mean temperature for the current month was the lowest ever reported at that place for October. The lowest mean temperature for October was noted generally over New York and New England in 1888; in the upper Mississippi and Red River of the North valleys and in Texas in 1887; along the south Pacific coast in 1886; from eastern Kansas to the middle Gulf coast in 1885; over the middle plateau region in 1883; from the Pacific coast between the 35th and 45th parallels over the northeast slope of the Rocky Mountains in 1881; in the Atlantic coast states south of New York in 1876; and in the middle Mississippi, lower Ohio, and lower Missouri valleys in 1873.

## MAXIMUM TEMPERATURE.

At Des Moines, Iowa, Huron and Rapid City, S. Dak., Valentine, Nebr., Cheyenne, Wyo., Denver, Colo., Walla Walla and Olympia, Wash., and Red Bluff, Cal., the maximum temperature for the current month was higher than previously reported for October.

The highest temperature reported by a regular station of

the Weather Bureau was 100, at Yuma, Ariz., on the 4th. The maximum temperature was above 90 in the central valleys of California, in southern California and western Arizona, in South Dakota, in southern Texas, and in an area extending over western Arkansas and northwestern Louisiana, and was above 80, except from the western lake region over New York and New England, on the northeast slope of the Rocky Mountains, and along the immediate middle and north Pacific coasts. In eastern Maine, at stations in the extreme northern lake region, and at points on the immediate middle and north Pacific coasts the maximum temperature was below 70.

Reports of voluntary observers show maximum temperature 110 in the lower Colorado valley.

## MINIMUM TEMPERATURE.

At Chattanooga, Tenn., Key West, Fla., and Los Angeles, Cal., the minimum temperature was lower than previously reported for October.

The lowest temperature reported by a regular station of the Weather Bureau was 14, at Havre, Mont., on the 29th. The minimum temperature was below 20 in the middle and upper Missouri and Red River of the North valleys, and over a great part of the middle and northern plateau regions, and was below 30 over northern New England, the upper lake region, and north of a line traced from the upper Ohio valley to Kansas, thence to southern New Mexico, thence to the Sierra Nevada Mountain range, and east of this line traced from eastern California to eastern Washington. Over the southern part of the Florida Peninsula and at points on the immediate middle and west Gulf coasts the minimum temperature was above 50.

## LIMITS OF FREEZING WEATHER.

The southern limit of freezing weather is shown on Chart V by a line traced from east-central Maine over central New England, thence to extreme southwestern Ontario, thence to eastern Virginia, thence to central Mississippi, thence to northern Arkansas and southeastern Kansas, thence to southern New Mexico, and thence to the Sierra Nevada Mountains in eastern California. The western limit of freezing weather is shown by this line continued northward over eastern California and central Oregon, thence eastward over the valley of the Columbia River, and thence northwestward to northwestern Washington.

## RANGES OF TEMPERATURE.

The greatest daily ranges of temperature are shown in the table of miscellaneous meteorological data. The greatest monthly ranges of temperature were noted in the middle Missouri valley, where they exceeded 70. From that region the monthly ranges decreased eastward to less than 30 on the southeast New England coast, southeastward to less than 30 over extreme southern Florida and to less than 40 along the immediate middle and west Gulf coasts, southwestward to less than 40 on the south Pacific coast, and westward to less than 30 along the immediate middle and north Pacific coasts.

## TEMPERATURE, JANUARY TO OCTOBER.

For the period January 1 to October 31, 1892, the temperature averaged about normal in the middle Atlantic states, the Ohio Valley and Tennessee, the lower lake region, the upper Mississippi and Missouri valleys, on the eastern slope of the Rocky Mountains, over the southern plateau region, and on the north Pacific coast. In New England, the upper lake region, and over the northern plateau region the temperature averaged less than 1 above, and in the extreme northwest and over the middle plateau region it was 1 to 2 above the average. In the west Gulf states and on the middle Pacific coast the temperature was less than 1 deficient, and in the south Atlantic and east Gulf states, at Key West, Fla., and on the south Pacific coast it was 1 to 2 below the average for the period named.

## PERIODS OF HIGH TEMPERATURE.

The month opened with temperature 20 to 30 above the normal in the Dakotas, and maximum temperature 90 to 98 in South Dakota. This warm wave extended over Wisconsin and upper Michigan on the 2d and reached the middle Atlantic states on the 3d. On the 5th a temperature rise of 10 to 20 occurred in Manitoba, and the temperature was about 20 above the normal in that region. This warm wave extended over the Lake region and Ohio Valley on the 6th, and overspread the Atlantic coast states north of Florida during the 7th. A slight rise in temperature extended from the Northwest to the middle and south Atlantic states from the 8th to the 11th.

A slight rise in temperature extended from the Northwest to the Gulf States from the 10th to 12th, and a general and slight rise occurred east of the Mississippi River from the 13th to 15th. On the 14th the temperature rose 6 to 14 in the Rocky Mountain and plateau regions; on the 15th a marked rise in temperature was noted from the Mississippi River to the Rocky Mountains; on the 16th a slight rise occurred in the central valleys; on the 17th a rise of 10 was noted in the western lake region, and the highest temperature of the month was registered in central and western Tennessee; on the 20th the temperature rose 10 to 20 in the Lake region and Ohio Valley, and the highest temperature of the month was noted at points in the upper Ohio valley and on the lower lakes; during the 19th the warmer weather extended over the middle Atlantic and New England states.

A slight rise in temperature extended from the north-central districts to the middle Atlantic and New England coasts from the 20th to the 22d. On the 27th the temperature rose 10 to 18 in the Southwest, on the 28th there was a rise of 10 to 20 in the middle Mississippi and Ohio valleys, and on the 29th the warmer weather reached the south Atlantic and Florida coasts. On the 30th the temperature rose 10 to 14 in the middle Mississippi valley, and on the 31st a marked rise occurred east of the middle and lower Mississippi rivers.

## PERIODS OF LOW TEMPERATURE.

From the 1st to the 6th a cool wave advanced from the northeast slope of the Rocky Mountains, carrying the line of freezing temperature to the upper Ohio valley on the 6th. A cool wave passed from the Saskatchewan Valley and the northern plateau region to the Atlantic coast from the 5th to the 9th, with temperature 8 below freezing in South Dakota and northeastern Minnesota on the 7th. A cool wave which appeared over the middle and northern plateau regions on the 11th reached the Mississippi Valley on the 14th and the Atlantic coast on the 17th. From the 13th to the 15th a cold wave extended over the plateau and Rocky Mountain regions from the Pacific coast. From the 16th to the 18th it advanced over the Mississippi Valley, with temperature 14 to 16 below freezing in the middle and northern Rocky Mountain regions, and reached the middle Atlantic and New England coasts on the 20th.

From the 21st to the 24th a cold wave passed from the northeast slope of the Rocky Mountains to the middle and south Atlantic coasts, carrying the line of freezing weather to northern Missouri, central Ohio, and West Virginia. From the 25th to the 28th a cool wave passed over the region between the lower Missouri valley and the east Gulf states, carrying the line of freezing weather to southern Kansas and the north part of the east Gulf states. A well marked cold wave advanced from the western Saskatchewan valley to the Atlantic coast from the 27th to 30th, carrying the line of freezing weather to southern New Mexico and the central part of the middle Gulf states.

## FROST.

Frost injurious to vegetation was reported as follows: 2d,

Harrisburg, Pa., plants slightly nipped; York, Pa., temperature fell to 33, heavy frost. 3d, heavy frost general in Virginia and Maryland. 5th, Wauseon, Ohio, corn killed. 6th, damage to tender vegetation throughout Ohio, and at Alpena, Mich. 8th, Larrabee, Iowa, corn and garden vegetables killed; Wakefield, Kans., tender vegetation killed. 9th, heavy frost general in Iowa, eastern Kansas, eastern Nebraska, and northern Illinois. 10th, Albany and Oswego, N. Y., tender plants killed. 11th, Susanville, Cal., garden vegetables killed. 13th, Salt Lake City, Utah, tender vegetation killed. 25th, general in Missouri, western Tennessee, Arkansas, and Louisiana, causing damage in exposed places. 26th, general in the Gulf States, and slight damage at Jacksonville, Fla. 27-28th, in Kentucky and Tennessee, and north parts of the Gulf States. 31st, Augusta, Ga., temperature 33, heavy frost, tender vegetation killed.

The first light frost of the season was reported as follows: 2d, Lansing and Port Huron, Mich.; Saxon and Roxboro, N. C.; Cleveland, Ohio; Edinboro and Pittsburg, Pa.; Deseret, Utah; Ashland and Wytheville, Va.; Ella and Martinsburg, W. Va. 3d, Eastport, Me.; Leonardtown, Md.; Somerset, Mass.; Greensboro, Louisiana, Mount Pleasant, Oak Ridge, Raleigh, Rockingham, Soapstone Mount, and Weldon, N. C.; Harrisburg, Pa.; Narragansett Pier, R. I.; Bedford City, Birdsneest, Cape Henry, Dale Enterprise, Hot Springs, Lynchburg, Mossing Ford, and Spottsville, Va.; Grafton, W. Va. 4th, Payette, Idaho; Edmonton, Ky.

5th, Riley, Ill.; Kalamazoo, Mich.; Columbus and Toledo, Ohio; Phoenixville, Pa.; Parkersburg, W. Va.; Green Bay, La Crosse, and Milwaukee, Wis. 6th, New Haven, Conn.; Havana and Springfield, Ill.; Jeffersonville, Ind.; Greensburg and Pellville, Ky.; Portland, Me.; Cumberland, Md.; Rochester, N. Y.; Lenoir, N. C.; Sandusky, Ohio; Philadelphia, Pa.; Longshore, S. C.; Nashville, Tenn.; Salem, Va. 7th, Show Low, Ariz.; Canton, Mo.; Buffalo and Gate City, Okla. 8th, Purcell, Ind. T.; Fort Madison, Greenfield, and Indianola, Iowa; Columbus, Concordia, Kansas City, Morse, and Sterling, Kans.; Appleton City, Carthage, Edge Hill, Fayette, Glasgow, Lebanon, Neosho, Oak Ridge, and Steelville, Mo.; Kearney and Omaha, Nebr.; Yankton, S. Dak.

9th, Lynn, Ala.; Eagle Pass, Ariz.; Fort Smith, Ark.; Bushnell, Cairo, and Jordans Grove, Ill.; Davenport, Dubuque, Keokuk, and Keosauqua, Iowa; Pontotoc and Water Valley, Miss.; Liberty, Oakfield, Saint Charles, Saint Louis, and Shelby, Mo.; near Oklahoma City, Okla.; Ashwood, Tenn.; Aurora, Forestburg, Graham, Highland, Mesquite, Nacogdoches, and New River City, Tex. 10th, Adairsville, Dahlonga, Diamond, and Marietta, Ga.; Louisville, Ky.; Meridian, Miss.; Hillsboro, N. Mex.; Albany, N. Y.; Burnett, Okla.; Effingham and Statesburg, S. C.; Chattanooga, Knoxville, and Memphis, Tenn.; Mountain Spring and near Palestine, Tex. 11th, San Ardo, Cal.; Santa Fe, N. Mex. 12th, Hydesville, Cal.

13th, Dudleyville, Ariz.; Bakersfield and San Bernardino, Cal.; Salina, Kans.; Colfax, Wash. 14th, Kennedy Gold Mine and Upper Lake, Cal.; Pueblo, Colo.; New Haven, Ill.; Hartley, Tex. 15th, Agnew, Georgetown, Independence, Napa, Sacramento, and Willows, Cal.; Roseburg, Oregon; Walla Walla, Wash. 16th, in the Cajon Valley and Pasadena, Cal.; East Portland, Oregon; Chelan, Fort Canby, and Madrone, Wash. 17th, Mount Huachuca, Natural Bridge, and Winslow, Ariz.; Eureka, Julian, Lagrange, Lodi, San Jacinto, and Wheatland, Cal.; Coldwater, Tex.; Fort Townsend, Wash. 18th, Tucson, Ariz.; Dodge City, Kans.; La Luz, N. Mex. 19th, near Yuma, Ariz.; Yuba, Cal.; Sedalia, Mo.

21st, Oswego, Ill. 22d, Nogales, Ariz. 23d, Jefferson City, Mo.; Pomeroy, Wash. 24th, Eufaula, Ind. T.; Kiowa, Kans.; Earlington, Ky.; Fox Creek and Lexington, Mo.; Childress, Tex. 25th, Warrior, Ala.; Camden, Helena, and Little Rock,

Ark.; Lehigh and South McAlester, Ind. T.; Lake Charles and Shreveport, La.; Agricultural College, Batesville, and Fayette, Miss.; New Haven, Mo.; Atlantic City, N. J.; Sac and Fox Agency, Okla.; Brownsville, Tenn.; Arlington, Burnet, Corsicana, Dallas, Grape Vine, Roby, and Weatherford, Tex.

26th, Auburn, Citronelle, Demopolis, Florence, Fort Deposit, Gadsden, Livingston, Mobile, Montgomery, Tallahassee Falls, and Tuscaloosa, Ala.; Bristol and Jacksonville, Fla.; Alapaha, Athens, Augusta, Camak, Darien, Dublin, Fort Gaines, Forsyth, Lagrange, Louisville, Lumpkin, Milledgeville, Monticello, Morgan, Piscola, Savannah, and West Point, Ga.; Cheneyville, Coushatta, Delhi, Grand Coteau, Homer, Lafayette, Melville, and Monroe, La.; Brookhaven, Canton, Crystal Falls, Greenville, Hattiesburg, Holly Springs, Louisville, Pearlinton, Vicksburg, and Yazoo City, Miss.; Southport and Wilmington, N. C.; Albany, Oregon; Aiken, Charleston, Cheraw, and Tillers Ferry, S. C.; Boerne, Brazoria, Devine, Hallettsville, Menardville, New Braunfels, and Palestine, Tex.; East Sound and Olga, Wash.

27th, Blakely, Eastman, Point Peter, and Thomasville, Ga.; Schriever, La.; Solomons, Md.; Currituck Inlet, N. C.; near Portland, Oregon; Simpsonville, S. C.; Norfolk, Va. 28th, Orlando and Pensacola, Fla.; Poulam, Ga.; Jackson, Miss. 29th, Bisbee and Wilgus, Ariz.; Fort Meade, Plant City, and Tampa, Fla. 31st, Hatteras, N. C.; Port Royal, S. C.

The first heavy frost of the season was reported as follows: 1st, Olney, Ill.; Greensboro, Pa. 2d, Cheboygan, Mich.; Carson City, Nev.; Buffalo, Ithaca, and Palermo, N. Y.; Bement and Garrettsville, Ohio; Corry, Dyberry, Grampian, Quakerstown, Salem Corners, and Wellsboro, Pa. 3d, Barren Creek Springs, Md.; Bridgeton and Egg Harbor City, N. J.; Lowville, N. Y.; Goldsboro and Washington, N. C.; Ashland, Va. 4th, Valley Head, Ala.; Thornville, Mich.; Halls Peak, N. Mex. 5th, Watseka, Ill.; Williamsburg, Ky.; Leonardtown, Md.; Detroit, Grand Haven, Lansing, and Mottville, Mich.; Wauseon, Ohio; Big Stone Gap and Wytheville, Va.; Bluefield, W. Va.; Barron, near Milwaukee, and Viroqua, Wis.

6th, Washington, D. C.; Lagrange, Ill.; Burkesville and Harrodsburg, Ky.; Baltimore, Md.; Royalston, Mass.; Manistee and Port Huron, Mich.; Cincinnati, Columbus, North Lewisburg, Toledo, and Westerville, Ohio; Rugby, Tenn.; Bedford City, Clifton Forge, Dale Enterprise, Hot Springs, Nottoway, and Staunton, Va.; Buckhannon, Central Station, Glenville, Grafton, Parkersburg, and Tannery, W. Va. 7th, Fairfield, Iowa; Woodstock, Md.; Grand Forks, N. Dak.; Martinsburg, W. Va. 8th, Effingham, Ill.; Ames, Clarinda, Glenwood, Grinnell, Logan, and Sioux City, Iowa; Leavenworth, Manhattan, and Wakefield, Kans.; Minneapolis, Redwood Falls, and Saint Paul, Minn.; Langdon and Oregon, Mo.; Genoa, North Platte, Springview, and Valentine, Nebr.; Ellendale, Grand Rapids, and Reynolds, N. Dak.; Gate City, Okla.; Highmore, Kimball, Millbank, and Pierre, S. Dak.

9th, Carlinville, Louisville, Walnut, and White Hall, Ill.; Belle Plaine, Blockton, Clinton, Corning, Cresco, Des Moines, Dubuque, Indianola, Iowa City, Iowa Falls, Murray, Oskaloosa, and Vinton, Iowa; Concordia, Cunningham, Eureka Ranch, Independence, Kansas City, Marion, Rome, Sterling, and Topeka, Kans.; Harrisonville, Kansas City, Mine La Motte, Neosho, Platte River, and Rea, Mo.; Fond du Lac, Wis. 10th, Show Low, Ariz.; Russellville, Ky.; Oswego, N. Y.; Edinboro and Phoenixville, Pa. 11th, Susanville, Cal.; Olio and Socorro, N. Mex. 12th, Idaho Falls, Idaho; East Canterbury, N. H.; Fort Stanton and Santa Fe, N. Mex.; Deseret, Utah; Hartland, Vt.

13th, Eastport, Me.; Helena and Miles City, Mont.; Salt Lake City, Utah. 14th, Montrose, Colo.; Buffalo, Okla. 15th, Forestville, Iowa Hill, and Kennedy Gold Mine, Cal. 16th, near Eagle Pass and near Florence, Ariz.; Independence and Keeler, Cal.; Colfax, Pine Hill, and Rosalia, Wash. 17th, Payson, Ariz.; Georgetown, Cal. 18th, San Ardo, Cal.; Rocky Ford, Colo.; Adrian, Mo.; Kearney, Nebr. 19th, Dudleyville, Ariz.; Davenport, Iowa; Lamonte, Mo.; Lincoln, Nebr.; Estalina Springs, N. Mex.; La Crosse, Wis. 20th, Payette, Idaho; McCune, Mo.; Salem, Va. 21st, Calabasas, Ariz. 22d, Beverly, N. J.; Easton, Pa.; Yankton, S. Dak.

23d, Chicago, Oswego, Ottawa, Riley, Springfield, and Sycamore, Ill.; Amana, Cedar Rapids, Fort Madison, Greenfield, Grundy Center, Hampton, Hopkinton, Hopeville, Keokuk, Keosauqua, Mechanicsville, Monticello, Mount Ayr, and Storm Lake, Iowa; Red Wing, Minn.; New Boston and Pickering, Mo.; Green Bay, Oshkosh, Waukesha, and Westfield, Wis. 24th, Indianapolis, Ind.; Purcell and Pauls Valley, Ind. T.; Darksville and Warrenton, Mo.; La Luz, N. Mex.; Saxon, N. C.; Kingfisher, Okla.; Pittsburg, Pa.; Kingston and Narragansett Pier, R. I.; Amarillo, Floydada, and Silver Falls, Tex.; Ella, W. Va.; Milwaukee, Wis.

25th, Fort Smith, Ark.; New Haven and New London, Conn.; Elberton, Hawkinsville, Hephzibah, and Homerville, Ga.; Cairo, Griggsville, and Havana, Ill.; Winterset, Iowa; Columbus, Dodge City, and Morse, Kans.; Catlettsburg, Ky.; New Bedford, Mass.; Water Valley, Miss.; Appleton City, Carrollton, Carthage, Clinton, Columbia, East Lynne, Eldon, Edge Hill, Fayette, Fox Creek, Gainesville, Gallatin, Grovedale, Hannibal, Lebanon, Lexington, Liberty, Oak Ridge, Oakfield, Olden, Poplar Bluff, Saint Louis, Shelbyville, Steelville, Warrensburg, and Wheatland, Mo.; Falls City, Nebr.; Gallinas Spring, N. Mex.; Murphy, N. C.; Guthrie, Keokuk Falls, and Oklahoma City, Okla.; Abilene, Brady, Houston, and Kent, Tex.

26th, Cordova, Decatur, Selma, Talladega, Tuscumbia, and Warrior, Ala.; Camden, Helena, and near Little Rock, Ark.; Adairsville, Americus, Atlanta, Diamond, Marshallville, Resaca, Rome, and Statesboro, Ga.; Jordans Grove, New Haven, and Palestine, Ill.; Salina, Kans.; Greensburg, Ky.; Franklin, Liberty Hill, Marksville, and Shreveport, La.; Holly Springs, Meridian, Palo Alto, University, Vaiden, and Washington, Miss.; Glasgow, Gordonsville, Jefferson City, and Sedalia, Mo.; Charlotte, Greensboro, Lenoir, Lumberton, Mount Pleasant, Oak Ridge, Raleigh, Soapstone Mount, and Weldon, N. C.; Allendale, Batesburg, Columbia, Effingham, Florence, Greenville, Hardeeville, Longshore, Statesburg, and Saint Stephens, S. C.; near Chattanooga and Memphis, Tenn.; Richmond and Spottsville, Va.

27th, Fort Deposit, Ala.; Dublin and West Point, Ga.; Jeffersonville, Lafayette, and Vevay, Ind.; Eufaula, Ind. T.; Edmonton, Matlock, and Shelbyville, Ky.; Boston, Mass.; Vermont, Mo.; Bryson City and Newbern, N. C.; Birdsnest, Va.; Port Angeles, Wash. 28th, Auburn, Demopolis, Livingston, and Montgomery, Ala.; Athens, Blakely, Fort Gaines, Louisville, Lumpkin, Marietta, Milledgeville, Monticello, and Morgan, Ga.; Lexington, Louisville, and Pellville, Ky.; New Brunswick, N. J.; Asheville and Louisburg, N. C.; Simpsonville, S. C.; Chattanooga, Knoxville, Nashville, and Rogersville, Tenn.; Avon, Lynchburg, and Mossing Ford, Va. 29th, Lochiel, Ariz.; Dahlonga, Ga.; Earlington, Ky.; Williams-town and Vineyard Haven, Mass. 30th, Kalamazoo, Mich.; Sandusky, Ohio; 31st, Gadsden, Ala.; Augusta, Ga.; Albany, N. Y.; Wilmington, N. C.